

Patent
62478-6017

IN THE CLAIMS:

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OCT 17 2006

1.-50. (Cancelled)

51. (Previously Presented) A plasma display panel driving method for a plasma display panel in which a plurality of discharge cells are arranged, each discharge cell having a pair of a first electrode and a second electrode, the plasma display panel driving method repeating the following steps to perform image display:

a set-up step for applying a set-up pulse to each of the plurality of discharge cells,

wherein the set-up pulse applied in the set-up step has a waveform that rises at an average voltage change rate of no less than 1 V/ μ s and no greater than 9 V/ μ s, and that starts to fall at a rate greater than the average voltage change rate at a time of the rising.

52. (Previously Presented) The plasma display panel driving method according to Claim 51,

wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than 5.25 V/ μ s and no greater than 9 V/ μ s.

53. (Previously Presented) The plasma display panel driving method according to Claim 51,

wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than 4.2 V/ μ s and no greater than 5.25 V/ μ s.

54. (Previously Presented) The plasma display panel driving method according to Claim 51,

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wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than 3.5 V/ μ s and no greater than 4.2 V/ μ s.

55. (Previously Presented) The plasma display panel driving method according to Claim 51,

5 wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than 2.625 V/ μ s and no greater than 3.5 V/ μ s.

56. (Previously Presented) The plasma display panel driving method according to Claim 51,

10 wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than 2.1 V/ μ s and no greater than 2.625 V/ μ s.

57. (Previously Presented) The plasma display panel driving method according to Claim 51,

wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than 1 V/ μ s and no greater than 2.1 V/ μ s.

15 58. (Previously Presented) A plasma display panel driving method for a plasma display panel in which a plurality of discharge cells are arranged, each discharge cell having a pair of a first electrode and a second electrode, the plasma display panel driving method repeating the following steps to perform image display:

a set-up step for applying a set-up pulse to each of the plurality of discharge cells;

20 and

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a write step for applying a write pulse to selected discharge cells of the plurality of discharge cells based on image data input,

wherein in the set-up step, the set-up pulse is applied via the first electrodes and has a waveform that rises at an average voltage change rate of no less than 1 V/ μ s and no greater than 9 V/ μ s and that starts to fall at a rate greater than the average voltage change rate at a time of the rising,

wherein in the write step, the write pulse is applied to the selected discharge cells via the first electrodes,

59. (Previously Presented) The plasma display panel driving method according to Claim 58,

wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than 5.25 V/ μ s and no greater than 9 V/ μ s.

60. (Previously Presented) The plasma display panel driving method according to Claim 58,

wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than 4.2 V/ μ s and no greater than 5.25 V/ μ s.

61. (Previously Presented) The plasma display panel driving method according to Claim 58,

wherein the set-up pulse applied in the set-up step rises at the average voltage change rate of no less than 3.5 V/ μ s and no greater than 4.2 V/ μ s.

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62. (Previously Presented) The plasma display panel driving method according to
Claim 58,

wherein the set-up pulse applied in the setup step rises at the average voltage
change rate of no less than $2.625 \text{ V}/\mu\text{s}$ and no greater than $3.5 \text{ V}/\mu\text{s}$.

5 63. (Previously Presented) The plasma display panel driving method according to
Claim 58,

wherein the set-up pulse applied in the set-up step rises at the average voltage
change rate of no less than $2.1 \text{ V}/\mu\text{s}$ and no greater than $2.625 \text{ V}/\mu\text{s}$.

64. (Previously Presented) The plasma display panel driving method according to
10 Claim 58,

wherein the set-up pulse applied in the set-up step rises at the average voltage
change rate of no less than $1 \text{ V}/\mu\text{s}$ and no greater than $2.1 \text{ V}/\mu\text{s}$.

65. (Previously Presented) A plasma display apparatus comprising:
a plasma display panel that includes a plurality of pairs of a first electrode and a
15 second electrode, and

a plurality of discharge cells, each discharge cell having one of the pairs of the
first electrode and the second electrode; and

a driving circuit operable to drive the plasma display panel by repeating a set-up
period of applying a set-up pulse to the discharge cells, wherein the driving circuit is operable to
20 apply, during the set-up period, the set-up pulse having a waveform that rises at an average
voltage change rate of no less than $1 \text{ V}/\mu\text{s}$ and no greater than $\text{V}/\mu\text{s}$, and that starts to fall at a
rate greater than the average voltage change rate at a time of the rising.

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66. (Previously Presented) The plasma display apparatus according to Claim 65,

wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at the average voltage change rate of no less than $5.25 \text{ V}/\mu\text{s}$ and no greater than $9 \text{ V}/\mu\text{s}$.

5 67. (Previously Presented) The plasma display apparatus according to Claim 65,

wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at the average voltage change rate of no less than $4.2 \text{ V}/\mu\text{s}$ and no greater than $5.25 \text{ V}/\mu\text{s}$.

68. (Previously Presented) The plasma display apparatus according to Claim 65,

10 wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at the average voltage change rate of no less than $3.5 \text{ V}/\mu\text{s}$ and no greater than $4.2 \text{ V}/\mu\text{s}$.

69. (Previously Presented) The plasma display apparatus according to Claim 65,

15 wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at the average voltage change rate of no less than $2.625 \text{ V}/\mu\text{s}$ and no greater than $3.5 \text{ V}/\mu\text{s}$.

70. (Previously Presented) The plasma display apparatus according to Claim 65,

20 wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at the average voltage change rate of no less than $2.1 \text{ V}/\mu\text{s}$ and no greater than $2.625 \text{ V}/\mu\text{s}$.

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71. (Previously Presented) The plasma display apparatus according to Claim 65,

wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse that rises at the average voltage change rate of no less than $1 \text{ V}/\mu\text{s}$ and no greater than $2.1 \text{ V}/\mu\text{s}$.

5 72. (Previously Presented) A plasma display apparatus comprising:

a plasma display panel that includes a plurality of pairs of a first electrode and a second electrode; and

a plurality of discharge cells, each discharge cell having one of the pairs of the first electrode and the second electrode; and

10 a driving circuit operable to drive the plasma display panel by repeating a set-up period of applying a set-up pulse to the discharge cells, and

a write period of applying a write pulse to selected discharge cells of the plurality of discharge cells based on image data input,

15 wherein the driving circuit is operable to apply, during the set-up period, the set-up pulse via the first electrodes, the set-up pulse having a waveform that rises at an average voltage change rate of no less than $1 \text{ V}/\mu\text{s}$ and no greater than $9 \text{ V}/\mu\text{s}$ and that starts to fall at a rate greater than the average voltage change rate at a time of the rising, and

wherein the driving circuit is operable to apply, during the write period, the write pulse to the selected discharge cells via the first electrodes.

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73. (Previously Presented) The plasma display apparatus according to Claim 72,
wherein the driving circuit is operable to apply, during the set-up period, the set-
up pulse that rises at the average voltage change rate of no less than 5.25 V/ μ s and no greater
than 9 V/ μ s.

5 74. (Previously Presented) The plasma display apparatus according to Claim 72,
wherein the driving circuit is operable to apply, during the set-up period, the set-
up pulse that rises at the average voltage change rate of no less than 4.2 V/ μ s and no greater than
5.25 V/ μ s.

10 75. (Previously Presented) The plasma display apparatus according to Claim 72,
wherein the driving circuit is operable to apply, during the set-up period, the set-
up pulse that rises at the average voltage change rate of no less than 3.5 V/ μ s and no greater than
4.2 V/ μ s.

15 76. (Previously Presented) The plasma display apparatus according to Claim 72,
wherein the driving circuit is operable to apply, during the set-up period, the set-
up pulse that rises at the average voltage change rate of no less than 2.625 V/ μ s and no greater
than 3.5 V/ μ s.

20 77. (Previously Presented) The plasma display apparatus according to Claim 72,
wherein the driving circuit is operable to apply, during the set-up period, the set-
up pulse that rises at the average voltage change rate of no less than 2.1 V/ μ s and no greater than
2.625 V/ μ s.

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78. (Previously Presented) The plasma display apparatus according to Claim 72,
wherein the driving circuit is operable to apply, during the set-up period, the set-
up pulse that rises at the average voltage change rate of no less than 1 V/ μ s and no greater than
2.1 V/ μ s.